DOCUMENT RESUME

ED 444 482 IR 020 137

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TITLE New Horizons in Distance Education: Re-Mapping the Pedagogical Terrain.
PUB DATE 2000-00-00
NOTE 7p.; In: Society for Information Technology & Teacher Education International Conference: Proceedings of SITE 2000 (11th, San Diego, California, February 8-12, 2000). Volumes 1-3; see IR 020 112.
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Case Studies; Computer Mediated Communication; *Computer Uses in Education; *Distance Education; Educational Technology; Higher Education; *Inservice Teacher Education; Instructional Design; Licensing Examinations (Professions); Secondary Education; Secondary School Teachers; Teacher Certification; Teaching Methods; World Wide Web

ABSTRACT

This paper presents a case study of an online block of four courses leading to certification of secondary teachers who are presently teaching in middle and secondary schools on emergency certificates. The courses were taken by 16 post-baccalaureate students during fall semester 1998 and spring semester 1999. The primary goal of the project was to determine whether distance education courses can actually be aligned to pedagogical practices that serve the needs of a rapidly-evolving, technology-assisted, information-driven society. Data were gathered from students and professors, as well as from ExCET test (state licensure exam) results. This paper reports findings regarding student interactions with World Wide Web-based lessons, including learning community discussion via a threaded message board, posting primary data, posting lesson plans and textbook evaluations, book club discussions, analysis of current issues, and simulation. The outcomes of the case study supported the belief that online courses could be interactive and problem-solving in nature, making use of the student's teaching placement. Consideration of current issues in teacher preparation and access to a laboratory for real-time assignments supported the success of the students in their work environment and on their required exam for certification. (Author/MES)

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New Horizons in Distance Education: Re-mapping the Pedagogical Terrain

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Abstract

This paper presents a case study of an online block of four courses leading to certification of secondary teachers who are presently teaching in middle and secondary schools on an emergency certificate. The courses were taken by sixteen post-baccalaureate students over fall semester 1998 and spring semester 1999. The primary goal of this project was to answer the question, can distance education courses actually be aligned to pedagogical practices which serve the needs of a rapidly-evolving, technology-assisted, information-driven society? Data was gathered from students and professors, as well as ExCET test (state licensure exam) results. The outcomes of the case study supported the belief that online courses could be interactive and problem-solving in nature, making use of the student's teaching placement. Consideration of current issues in teacher preparation and that access to a laboratory for real time assignments supported the success of the students in their work environment and on their required exam for certification.

Perspective

In a time when modern culture is linked by telecommunications technologies in ways never before possible, people transmit and process information, conduct business, collaborate in research, and engage in social and political discourse in dramatic new ways (Kapor, 1998, Wriston, 1996). Jobs are being redefined, and the age-old restrictions of time and space are imposing fewer limitations than ever before in economic/social/political arenas. Education, typically a bastion of cultural values, has been slow to adapt to the radically changing cultural landscape that characterizes this Age of Information. Education, stifled by bureaucratic norms, historical values, and linked to the political and economic destinies of its constituents, struggles for a cost-effective way to enter the efficient development of a technological infrastructure to effectively serve the needs of a changing clientele. The intensity of effort required to implement such development monopolizes professional energies that need to be put into understanding the pedagogical implications of technological development in order to guarantee its effectiveness (Traub, 1997). Unfortunately, this lack of focus on the pedagogical implications of technology, resulting perhaps from a lack of human resources for exploring this problem or society's faith in scientific progress may have detrimental results. Institutions implement new technologies under the assumption that "if we bring the technology, they will come," or more specifically, "if we bring the technology, they will learn." Such blind faith may actually diminish the effectiveness of educational technologies and transform the profound and dynamic tools they offer into the static appendages of outmoded pedagogy.

Higher education has been particularly challenged to apply technological tools to meet the needs of its faculty and students. Economically speaking, the introduction and implementation of new technologies within a higher education compels institutions that are perpetually concerned with finances and funding to maximize the efficiency and effectiveness of such implementation. From a pedagogical perspective, higher education institutions are acutely aware that they need to meet the diverse needs of student populations whose characteristics are continually transforming beyond those of the traditional student (Dalziel, 1997).

Contemporary students need alternative times to attend classes because many of them work as they attend school; indeed, they often need to access information "just in time," in order to meet the demands of their jobs, and they need to accelerate beyond traditional course units of time and content. As a solution to these diverse needs, distance education is heralded as an excellent vehicle to help such students

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move across the challenging terrain of higher education towards their uniquely individual destinations. Unfortunately for these students, distance education classes may often rely on pedagogical techniques and traditions that are not consistent with the changing needs of society. Traditional courses are put on-line in a traditional pedagogical manner, with didactic lectures, quizzes and paper assignments. Yet today's highly interactive society demands that its citizens think critically, problem-solve, and see outside traditional paradigmatic structures (Cox, 1997, Frazier, 1997, and Boetcher, 1997). Thus, effective educators must prepare students in a manner consistent with the needs and demands of their society. Distance education in particular needs to provide the types and extent of interactivity consistent with the new global society. But the question is: Can distance education courses actually be aligned to pedagogical practices which serve the needs of a rapidly-evolving, technology-assisted, information-driven society?

Purpose of the Study

The purpose of this study is to analyze a case study that examines a block of secondary teacher education methods courses taught at a mid-size state university using a web-based distance education approach for sixteen post-baccalaureate students who were teaching in grades 7-12 on emergency certification during the 1998-99 school year. The primary component of this project was to evaluate the development of an on-line learning environment that replicated some of the primary needs of the information-driven society in the context of the courses. Strategies implemented to support this goal were:

- Professor created problem-posing curriculum that required students to take the information they were learning in their methods courses, synthesize it, and apply it within the context of their own school or classroom.
- Professor created public cyber spaces for students to publish their work and to react to the work of their peers.
- Professor created public cyber spaces for students to debate, solve problems, and dialogue about current issues and concepts associated with the courses and their work.
- Professor modeling of meaningfully integrated technology in order to support a problem-posing curriculum.
- Students learning of requisite technological skills for engaging in class activities.
- Student reflection about their learning through journals, conversations, and electronic portfolios.

Methodology

Informants for this study include sixteen post-baccalaureate university students teaching on emergency certification, two professors, and the scores of the sixteen post-baccalaureate university students on the ExCET (state licensure exams) test. Data sources for this project include:

- Syllabi for the four courses in the distance education methods block
- Students' electronic papers, projects, field notes, response logs, and forum responses posted 30 classes meetings that were held over the course of two semesters, (36 weeks).
- Sixteen student-created web pages.
- Instructors' field notes from throughout the semester.
- One 60-minute professors' taped debriefing following the course.
- Sixteen end-of-course evaluations by students.
- Sixteen student EXCET scores.

Analysis

The course syllabi were analyzed for evidence of pedagogical practices that support the needs of a rapidly evolving, technology-assisted, information-driven society? The students' electronically posted papers, projects, field notes, response logs, and forum responses were analyzed qualitatively looking for evidence of theory to practice connections reflective of the changing pedagogy. The instructors' field notes

were analyzed qualitatively for evidence of professor reflection about their own theory-to-practice alignment with the changing needs of an information-driven, technologically-assisted society in the design and implementation of these courses. Sixteen end-of-course evaluations were examined for student satisfaction in meeting their learning needs according to the traditional university evaluation rubric.

Findings

Formative evaluations made at the close of Fall 1998 indicated student, instructor, and supervisor satisfaction with the methods' block. Students report a high correlation between material studied and its relevance to their classroom practice. Students, professors and supervisors also addressed areas of concern and recommendations for improvement.

The professors for the methods-on-line class published web pages to deliver information about the structure and content of the course, but the threaded message boards became the forum for students to interact with the class community, professors and other students in the class. Threaded message boards served multiple instructional purposes in the Spring 1999 component of the block. They provided a mechanism for the professors and students to:

- deliver information about the structure and content of lessons,
- post expository assignments discussing the application of theory to classroom practice,
- report primary data collected,
- post lesson plans and construct instructional strategies,
- summarize and reflect upon assigned readings from texts and journals,
- evaluate textbooks & class assignments,
- participate in book club discussions,
- present persuasive arguments on educational issues,
- analyze educational issues and current events, and
- simulate classroom practices through role play.

In a typical lesson, a professor posted:

- information about the dates and times the assignments were due for any particular class meeting,
- questions which guided student inquiry into the lesson,
- introductory information about the topic and supporting links to sites on the web, which provided a basis for linking student prior knowledge to the topic to be studied, and
- threaded message boards for students to respond to the readings, discuss their responses with each other, or post other instructional activities products.

Student Interactions with Web-Based Lessons

Learning Community Discussion via Threaded Message Board

While professors created web pages for each "class meeting" and primarily presented the structure and the content of the lesson on these web pages, they used the "forums," or threaded message boards, to reply to immediate questions about the lessons and to give feedback to student responses to the lessons. Students were also required to respond to their colleagues original postings and responses made by other class members. For example in SED 560, *Advanced Techniques and Methods of Instruction*, the lesson for class meeting three was designed to help students focus on their educational philosophy as they studied a range of learning theories and instructional models. After reading, students were asked in an open forum to explain the rationale and theory that supported their educational decisions and practices. As a first step toward the development of their educational philosophies, students simply summarized the four basic learning theories being studied: Behaviorism, Gestalt theory, Field theory, and Cognitive theory. The responding professor and members of the class were able to provide immediate feedback to the student by affirming the accuracy of what had been written. They extended the definition of cognitive theory, thus extending the content of the lesson and changing the structure of the original presentation of the material.

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In addition to delivering responses related to information about the structure and content of the lesson, threaded message boards provided a forum for posting expository assignments which helped make explicit the application of theory to classroom practice. One student, Lee Ann, illustrated how she used a behavioristic instructional strategy in her Spanish classroom. Then she made explicit how the instructional task was related to the theoretical definition of behaviorism. The forums provided a public space for her to articulate her understanding of the four basic learning theories. She used the threaded message boards to give her a public forum to reflect on her classroom practice and connect an element of that practice back to the theories she was studying. This posting of expository assignments encouraged a dialogue between students in the class and the rest of the learning community about the connection of the learning theory to classroom practice, giving them time and space to explore the connections.

Posting Primary Data

Providing a mechanism for delivering information about the structure and content of lessons and a public space for posting expository assignments led to making a more explicit connection between the educational theory and classroom practice. The threaded message boards provided a space for publishing primary data collected about the use of technology in the schools in which these post-baccalaureate students taught. For one assignment, students inquired into how technology was being used to support teaching and learning in their schools. They collected data and interviewed colleagues to find out about how they thought it helped and/or hindered the teaching and learning process.

Through the use of threaded message boards to disseminate primary data collected by the students, they had an opportunity to have their work read and responded to, and to read and respond to their classmates. This helped increase an awareness of the vast disparity among the schools and districts surveyed regarding the use of technology in teaching and learning and it helped increase students' awareness about the possibilities and limitations of technology within education as perceived by educators. The public forum gave an opportunity for rapid publishing, reading, and response by professional colleagues, thus increasing the magnitude of their primary research.

Posting Lesson Plans and Textbook Evaluations

As part of the methods block of courses, students were required to write lesson plans that were supported by the learning theory they were studying and included the instructional strategies which exemplified this theory. The threaded message boards provided a public forum to publish lesson plans. The open nature of this forum allowed students to give and receive feedback on each other's lesson plans, to test them against the theories or constructs they studied, and helped them to be accountable to a more extensive audience than just the instructor.

Students learned to evaluate instructional materials and had the opportunity to read, reflect and respond to each other's evaluations. Once again, the public nature of the forums increased awareness of each others' responses. Students reflected on the fact that textbooks have enormous influence on students; the amount of classroom time students spend reading textbooks; and the rights and responsibilities teachers have to evaluate text materials for their own classrooms, school, district, state, or national curriculum committees. Through the public nature of their posted evaluations, students realized the variety of opinions and perceptions that were held by textbook evaluators, and began to realize how this diversity of opinion could impact the larger economic and social issues surrounding textbook evaluation and purchasing. Students reported in the post-course debriefing, that they felt an increase in responsibility about textbook choice and reported feeling like they had an entry point into the process of textbook evaluation and purchase. They reported an increase in confidence after reading each other's evaluations. The evaluation task was not just limited to their perspective, but expanded to include the perspectives of the diverse group of peers who evaluated and posted to this forum.

Book Club Discussions

As part of the teaching and learning process, students read and discussed current education books

online through interactive forums. The discussions were held "book club" style with 2 or 3 students facilitating the discussion for each book club meeting. These students posted open-ended questions and class members responded on the forum and posed questions of their own. Discussions consisted of anything that the readings prompted the readers to think about - issues, concerns, questions, and comments.

The books were challenging, and controversial. They were chosen to challenge traditional view points and to encourage students to think, debate, and push the frontiers of teaching. The books were *Grading in the Post-Process Classroom: From Theory to Practice* (Hourigan et al, 1997) and *Life in Schools: An Introduction to Critical Pedagogy in the Foundations of Education* (McClaren, 1998). With the open parameters of this assignment, the student control of the discussion, and a public forum in which to discuss these issues, students increased their postings to the forums and the length of their responses. Student discussion leaders for the first book club meeting, posted questions to encourage processing the text. Students responded to the leaders pulling in many personal and professional experiences to passionately argue their points about assessment.

Students' responses addressed the issues the discussion leaders raised and greatly expanded those issues with anecdotes and illustrations from their own professional and personal experience. The open, public nature of the forum, as well as the assignment, opened boundaries of traditional teacher-directed assignments, allowing students to discuss be books and pertinent issues in a manner consistent with literary discussion in a real world context. The discussion, mediated by the technology, opened the way for everyone to speak and to be heard. Students commented in the post-course debriefing that, in regular classrooms, they could sit silently and just listen, not having to form or offer an opinion, but, in these public forums, there was no place to hide. They had to consider the issues in the context of the multiple perspectives people used as they responded, and, moreover, they had to form an opinion and be able to justify their stance. The students credited this requisite participation with a great deal of their growth in this course.

Analysis of Current Issues

Current events that affected the educational community and society at large were used to encourage students to analyze the issues using the theories, concepts, and strategies that guide educators as they make critical decisions. Immediately after the shootings at Columbine High School, in Littleton, Colorado, an assignment was posted as a part of the SED 590 *Advanced Methods of Classroom Management* course that pressed the students for their interpretation of what had happened. The students were to use the context of the material they were reading and working with related to conduct disorder, emotional problems, and physiological problems. They were asked to describe what they believed to be an appropriate effort or approach to the issue of school violence.

The students' responses to the forum were thoughtful and thought provoking. Again, the very public nature of the forum, coupled with the fact that peers would be reading and responding to their ideas caused students to answer with care, knowing that they would have to defend their stance to their peers.

Simulation

Lastly, threaded message boards were used for the purpose of role-play and/or simulation. One simulation assignment presented a scenario from an Assessment, Review, Dismissal (ARD) Meeting (staffing of special education students). The online students were asked to prepare a contingency contract based upon their particular teaching situation and the age level of their students. The online students were to create the main character in the parameters of the students who they worked with in their teaching assignment. The contingency contract was posted to a forum where the other students could read each person's approach to dealing with the simulated student

Through this public forum, students could freely examine each other's responses to the problem posed for this simulation. They reported that this not only provided a benchmark for their own thinking but greatly expanded their opportunities to examine multiple solutions for the problem. Once again, done in a traditional classroom assignment, the opportunities for peer feedback might not be as significant. And, once again, there could be no silent observers. Everyone had to offer a solution and had to hold their own solutions up to the scrutiny of their peers.

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ExCET Test Scores

Teacher certificates are given to those individuals who meet the required course of study and successfully perform on one licensure examination related to the content area the teacher will be certified in and one related to pedagogy. Fifteen of the sixteen online class members passed both exams on their first attempt, a 94% pass rate which exceeded the face to face class statistics for other sections of the methods block of courses.

Recommendations

- Educators must situate learning in the context of problems that require students to take the information they are learning in their courses and synthesize it and apply it within a real world context.
- Educators must facilitate virtual communities of learners who work in small, collaborative groups to achieve a common goal.
- Educators must create public cyber-spaces for students to debate, solve problems, and dialogue about current issues and concepts associated with their courses and their work environment.
- Educators must model the meaningfully integrated technology in order to support a problem-posing curriculum.
- Students should learn technological skills in the context of engaging in class activities.
- Student should have opportunities to reflect about their learning through authentic means such as journals, conversations, and electronic portfolios.

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